Introduction To SQL Databases-55315

Duration: 24 Hours (3 Days)

Overview

The Introduction to SQL Databases-55315 course is designed as a foundational course for individuals seeking to delve into the world of SQL databases. The curriculum offers a comprehensive overview of database concepts, beginning with Module 1 that covers the basics of Relational databases, Alternative database types, Data analysis, and an introduction to SQL Server's database languages.Through basic SQL training courses such as this, learners will build a solid understanding of data modeling in Module 2, including the ANSI/SPARC database model and Entity-relationship modeling. Module 3 moves into the critical area of Normalization and its counterpoint, deNormalization.Module 4 focuses on the establishment and maintenance of relationships and Referential integrity, crucial for database integrity. Module 5 addresses performance issues, highlighting the importance of Indexing, Query performance, and Concurrency. Finally, Module 6 introduces learners to core database objects such as tables, views, and stored procedures.Overall, this course equips learners with the essential knowledge and skills to navigate and manipulate SQL databases effectively, providing a solid foundation for further advanced database management and development.

Audience Profile

Introduction to SQL Databases-55315 is a foundational course designed to impart essential skills in managing and analyzing data using SQL databases.

- Target audience for the course includes:
- Aspiring Database Administrators (DBAs)
- Data Analysts seeking to understand database structures
- IT Professionals transitioning to database-related roles
- Software Developers who need to interact with databases
- System Analysts involved in data-related projects
- Business Intelligence Professionals
- Data Scientists who require a grounding in database technology
- Students pursuing careers in data management
- Technical Project Managers overseeing database projects
- Quality Assurance Testers dealing with data validation
- Report Writers and Data Visualisation Specialists

Course Syllabus

Module1: Introduction to databases

- This module introduces key database concepts in the context of SQL Server 2016.

Lessons

- Introduction to relational databases
- Other types of databases
- Data analysis
- Database languages in SQL Server

Lab: Exploring and querying SQL Server databases

- After completing this module, you will be able to:
- Describe what a database is
- Understand basic relational aspects
- Describe database languages used in SQL Server
- Describe data analytics

Module2: Data Modelling

- This module describes data modelling techniques.

Lessons

- Data modelling
- ANSI/SPARC database model
- Entity relationship modelling

Lab: Identify components in entity relationship modelling

- After completing this module, you will be able to:
- Understand the common data modelling techniques
- Describe the ANSI/SPARC database model
- Describe entity relationship modelling

Module3: Normalization

- This module describes normalization and denormalization techniques.

Lessons

- Fundamentals of Normalization
- Normal form
- Denormalization

Lab: Normalizing data

- After completing this module, you will be able to:
- Describe normalization benefits and notation
- Describe important normalization terms
- Describe the normalization levels
- Describe the role of denormalization

Module 4: Relationships

- This module describes relationship types and effects in database design.

Lessons

- Introduction to relationships
- Planning referential integrity

Lab: Planning and implementing referential integrity

- After completing this module, you will be able to:
- Describe relationship types
- Describe the use, types, and effects of referential integrity

Module 5: Performance

- This module introduces the effects of database design on performance.

Lessons

- Indexing
- Query performance
- Concurrency

Lab: Performance issues

- After completing this module, you will be able to:
- Discuss the performance effects of indexing
- Describe the performance effects of join and search types
- Describe the performance effects of concurrency

Module 6: Database Objects

- This module introduces commonly used database objects.

Lessons

- Tables
- Views
- Stored procedures, triggers and functions

Lab: Using SQL server

- After completing this module, you will be able to:
- Describe the use of tables in SQL Server
- Describe the use of views in SQL Server
- Describe the use of stored procedures in SQL Server
- Describe other database objects commonly used in SQL Server